

§ 56.70-20

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(7) Branch connections 2 in. NPS and smaller that do not require reinforcement may be constructed as shown in Fig. 127.4.8F of ANSI-B31.1. This construction is limited to use in Class I and II piping systems at a maximum

design temperature of 750 °F. or a maximum pressure of 1025 psi.

(h) *Heat treatment.* Heat treatment for welds shall be in accordance with subpart 56.85.

TABLE 56.70-15—REINFORCEMENT OF GIRTH AND LONGITUDINAL BUTT WELDS

Thickness (in inches) of base metal	Maximum thickness (in inches) of reinforcement for design temperature		
	Below 0 °F or above 750 °F	350° to 750 °F	0 °F and above but less than 350 °F
Up to 1/8, inclusive .....	1/16	3/32	3/16
Over 1/8 to 3/16, inclusive .....	1/16	1/8	3/16
Over 3/16 to 1/2, inclusive .....	1/16	5/32	3/16
Over 1/2 to 1, inclusive .....	3/32	3/16	3/16
Over 1 to 2, inclusive .....	1/8	1/4	1/4
Over 2 .....	5/32	(1)	(1)

<sup>1</sup> The greater of 1/4 in. or 1/8 times the width of the weld in inches.  
 NOTES: 1. For double welded butt joints, this limitation on reinforcement given above applies separately to both inside and outside surfaces of the joint.  
 2. For single welded butt joints, the reinforcement limits given above apply to the outside surface of the joint only.  
 3. The thickness of weld reinforcement is based on the thickness of the thinner of the materials being joined.  
 4. The weld reinforcement thicknesses must be determined for the higher of the abutting surfaces involved.  
 5. For boiler external piping use the column titled "Below 0 °F. or above 750 °F." for weld reinforcement thicknesses.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9978, June 17, 1970; CGD 73-254, 40 FR 40165, Sept. 2, 1975; CGD 77-140, 54 FR 40614, Oct. 2, 1989; 55 FR 39969, Oct. 1, 1990; CGD 95-012, 60 FR 48050, Sept. 18, 1995]

§ 56.70-20 Qualification, general.

(a) Qualification of the welding procedures to be used, and of the performance of welders and welding operators, is required, and shall comply with the requirements of the ASME Boiler and Pressure Vessel Code (section IX) except as modified by part 57 of this subchapter.

(b) Each butt-welded joint of Class I of Class I-L piping shall be marked with the welder's identification symbol. Dies shall not be used to mark the pipe where the pressure exceeds 600 pounds per square inch or the temperature exceeds 750 °F. or in Class I-L systems.

Subpart 56.75—Brazing

§ 56.75-5 Filler metal.

(a) The filler metal used in brazing must be a nonferrous metal or alloy having a melting point above 1,000 °F. and below that of the metal being joined. The filler metal must meet and flow freely within the desired temperature range and, in conjunction with a suitable flux or controlled atmosphere,

must wet and adhere to the surfaces to be joined. Prior to using a particular brazing material in a piping system, the requirements of § 56.60-20 of this part should be considered.

(b) The brazing material used shall have a shearing strength of at least 10,000 pounds per square inch. The maximum allowable working pressure for brazing piping shall be determined by this part.

(c) (Reproduces 128.1.2.) Fluxes that are fluid and chemically active at the brazing temperature shall be used when necessary to prevent oxidation of the filler metal and the surfaces to be joined and to promote free flowing of the filler metal.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 77-140, 54 FR 40615, Oct. 2, 1989]

§ 56.75-10 Joint clearance (reproduces 128.2.2).

(a) The clearance between surfaces to be joined shall be no larger than is necessary to insure complete capillary distribution of the filler metal; between